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IS 8014 (1983): Classification and nomenclature of dyeing and finishing machinery [TXD 21: Dyeing, Finishing and Allied Machinery and Accessories]



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Indian Standard

CLASSIFICATION AND NOMENCLATURE OF
DYEING AND FINISHING MACHINERY

(First Revision)

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INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Indian Standard

CLASSIFICATION AND NOMENCLATURE OF DYEING AND FINISHING MACHINERY

(*First Revision*)

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(*Continued on page 2*)

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(Continued from page 1)

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Indian Standard

CLASSIFICATION AND NOMENCLATURE OF DYEING AND FINISHING MACHINERY

(First Revision)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 10 January 1983, after the draft finalized by the Dyeing and Finishing Machinery Sectional Committee had been approved by the Textile Division Council.

0.2 This standard was first published in 1976 and has been revised to bring it in line with ISO 1506-1982 'Textile machinery — Dyeing, finishing and allied machinery — Classification and nomenclature', issued by the International Organization for Standardization. This standard will help eliminating ambiguity arising from local classification of dyeing and finishing machinery.

0.3 In the field of dyeing and finishing equipment a distinction is drawn between machines and apparatus. In the majority of the cases uniformity of treatment is obtained in machines by the movement of the goods, whereas in apparatus it necessitates circulation of the liquor in the bath.

0.4 Complete installations or complex machines comprising several types of basic equipment listed in the nomenclature have not been considered in this standard.

1. SCOPE

1.1 This standard gives classification and nomenclature for machines and apparatus used in the bleaching, dyeing, printing and finishing industries, classified, as far as possible, by the operations for which they are intended.

2. BROAD CLASSIFICATION

2.1 For the purpose of classification, dyeing and finishing machinery has been divided into the following groups:

<i>Group No.</i>	<i>Machinery Covered</i>
1	Equipment for singeing, scouring, bleaching and mercerizing
2	Equipment for washing
3	Equipment for special processes for wool (carbonizing, presetting, smoothing, chlorination, non-felting processes) and for heat treatment for synthetic textiles (setting and shaping)
4	Dyeing equipment
5	Printing equipment
6	Equipment for colour fixation by steaming and thermosol treatment
7	Drying equipment
8	Equipment for wetting and damping
9	Finishing equipment
10	Machines for measuring, inspecting, marking and packing
11	Additional equipment

3. DETAILED CLASSIFICATION AND NOMENCLATURE

CLASSIFICATION No.	NOMENCLATURE	CLASSIFICATION No.	NOMENCLATURE
1	EQUIPMENT FOR SINGEING, SCOURING, BLEACHING AND MERCERIZING	1.2.1.2	Autoclaves
1.1	Equipment for singeing¹⁾	1.2.1.2.1	— for material in open width
1.1.1	<i>Flame singeing</i>	1.2.1.2.2	— for slivers and tow
1.1.1.1	— by gas	1.2.1.2.3	— for yarns
1.1.1.2	— by liquid fuel	1.2.1.2.3.1	... in hank form
1.1.2	<i>Contact singeing</i>	1.2.1.2.3.2	... on cheeses or cones
1.1.2.1	<i>Plate singeing</i>	1.2.1.2.3.3	... in warp form
1.1.2.1.1	— electrically heated	1.2.1.2.4	— for woven and knitted fabrics
1.1.2.1.2	— gas heated	1.2.1.2.4.1	... in rope form (Kier)
1.1.2.1.3	— liquid fuel heated	1.2.1.2.4.2	... in open width
1.1.2.2	Singeing by cylinders	1.2.2	<i>Machines for scouring</i>
1.1.2.2.1	— electrically heated —	1.2.2.1	<i>Machines for impregnating</i>
1.1.2.2.2	— gas heated —	1.2.2.1.1	— in rope form (for example, saturators for fabric in rope form)
1.1.2.2.3	— liquid fuel heated —	1.2.2.1.2	— in open width (padding mangles, saturators for fabric in open width)
1.2	Equipment for scouring	1.2.2.2	<i>Machines for storage and reaction</i>
1.2.1	<i>Apparatus for scouring (kier boiling)</i>	1.2.2.2.1	— in rope form (J Box)
1.2.1.1	<i>Open kiers</i>	1.2.2.2.2	— in open width without batching
1.2.1.1.1	— for loose material	1.2.2.2.2.1	... in saturated steam without pressure
1.2.1.1.2	— for slivers and tow	1.2.2.2.2.1.1	... with plaiting in a J Box
1.2.1.1.3	— for yarn	1.2.2.2.2.1.2	... with plaiting on a conveyor
1.2.1.1.3.1	... in hank form	1.2.2.2.2.1.3	... with passage over rollers in a zigzag course
1.2.1.1.3.2	... on cheeses of cones	1.2.2.2.2.2	... in saturated steam under pressure
1.2.1.1.3.3	... in warp form	1.2.2.2.2.2.1	... with plaiting in a J Box
1.2.1.1.4	— for wover and knitted fabrics	1.2.2.2.2.2.2	... with plaiting on a conveyor
1.2.1.1.4.1	... in rope form	1.2.2.2.2.2.3	... with passage over rollers in a zigzag course
1.2.1.1.4.2	... in open width	1.2.2.2.2.3	... in superheated steam
	1) Singeing of fabric for gassing of yarns see the document dealing with spinning machinery.	1.2.2.2.2.3.1	... with plaiting in a J Box

CLASSIFICATION No.	NOMENCLATURE	CLASSIFICATION No.	NOMENCLATURE
1.2.2.2.2.3.2	... with plaiting on a conveyor	1.3.1.2.2	— for slivers and tow
1.2.2.2.2.3.3	... with passage over rollers in a zigzag course	1.3.1.2.3	— for yarns
1.2.2.2.3	— in open width with batching (pad roll)	1.3.1.2.3.1	... in hanks
1.2.2.2.3.1	... in saturated steam without pressure	1.3.1.2.3.2	... on cheeses or cones
1.2.2.2.3.1.1	... continuous	1.3.1.2.3.3	... in warp form
1.2.2.2.3.1.2	... discontinuous	1.3.1.2.4	— for woven and knitted fabrics
1.2.2.2.3.2	... in saturated steam under pressure	1.3.1.2.4.1	... in rope form
1.2.2.2.3.2.1	... continuous	1.3.1.2.4.2	... in open width
1.2.2.2.3.2.2	... discontinuous	1.3.2	<i>Bleaching machines</i>
1.2.2.2.3.3	... in superheated steam	1.3.2.1	Machines for impregnating
1.2.2.2.3.3.1	... continuous	1.3.2.1.1	— in rope form (for example saturators for fabrics in rope form)
1.2.2.2.3.3.2	... discontinuous	1.3.2.1.2	— in open width (padding mangles saturators for open width materials)
1.2.2.2.3.3.2	... discontinuous	1.3.2.2	Machines for storage and reaction
1.2.2.3	Combined machines for storage, reaction and impregnation	1.3.2.2.1	— in rope form (J Box)
1.2.2.3.1	— with perforated rotating roller and liquor circulation	1.3.2.2.2	— in open width without batching
1.3	Equipment for bleaching	1.3.2.2.2.1	... in saturated steam without pressure
1.3.1	<i>Bleaching apparatus</i>	1.3.2.2.2.1.1	... with J Box
1.3.1.1	Open bleaching vessels	1.3.2.2.2.1.2	... with plaiting on a conveyor
1.3.1.1.1	— for loose material	1.3.2.2.2.1.3	... with passage in a zigzag course
1.3.1.1.2	— for slivers and tow	1.3.2.2.2.2	... in saturated steam under pressure
1.3.1.1.3	— for yarns	1.3.2.2.2.2.1	... with J Box
1.3.1.1.3.1	... in hank form	1.3.2.2.2.2.2	... with plaiting on a conveyor
1.3.1.1.3.2	... on cheese or cones	1.3.2.2.2.2.3	... with passage in a zigzag course
1.3.1.1.3.3	... in warp form	1.3.2.2.2.3	... in superheated steam
1.3.1.1.4	— for woven and knitted fabrics	1.3.2.2.2.3.1	... with J Box
1.3.1.1.4.1	... in rope form	1.3.2.2.2.3.2	... with plaiting on a transporter
1.3.1.1.4.2	... in open width	1.3.2.2.2.3.3	... with passage in a zigzag course
1.3.1.2	Apparatus for bleaching in autoclaves	1.3.2.2.3	— in open width with batching
1.3.1.2.1	— for loose material	1.3.2.2.3.1	... in saturated steam without pressure
		1.3.2.2.3.1.1	... continuous
		1.3.2.2.3.1.2	... discontinuous
		1.3.2.2.3.2	... in saturated steam under pressure

CLASSIFICATION No.	NOMENCLATURE	CLASSIFICATION No.	NOMENCLATURE
1.3.2.2.3.2.1 1.3.2.2.3.2.2 1.3.2.2.3.3 1.3.2.2.3.3.1 1.3.2.2.3.3.2 1.3.2.3 1.3.2.3.1 1.3.3 1.4 1.4.1 1.4.1.1 1.4.1.2 1.4.2 1.4.2.1 1.4.2.2 2 2.1 2.1.1	... continuous ... discontinuous ... in superheated steam ... continuous ... discontinuous Machines for impregnation, storage and reaction — with revolving perforated roller and circulation of the liquor <i>Equipment for bleaching by gas (stoving)</i> Equipment for mercerizing <i>Equipment for mercerizing yarns</i> — in hanks (mercerizer for hanks) — in warp form (mercerizer for warps) <i>Equipment for mercerizing fabrics</i> Mercerizers without chain Mercerizers with chain EQUIPMENT FOR WASHING¹⁾ Equipment for washing loose material <i>Fork type washing machines</i>	2.1.2 2.1.3 2.1.4 2.1.4.1 2.1.4.2 2.2 2.2.1 2.2.1.1 2.2.1.1.1 2.2.1.1.2 2.2.1.2 2.2.2 2.2.2.1 2.2.2.1.1 2.2.2.1.2 2.2.2.1.3 2.2.2.2 2.2.2.2.1 2.2.2.2.2 2.2.2.2.3 2.3 2.3.1 2.3.1.1	<i>Harrow type washing machines</i> <i>Oval washing machines</i> <i>Apparatus with circulation of the liquor</i> — open type — under pressure Equipment for washing tow and yarn <i>Machines for washing hanks</i> — with hank holders ... with spraying ... without spraying (washing machines with bottles) — with conveyor (washing machines with conveyor) <i>Apparatus with circulation of the liquor</i> — open type ... in hanks ... on cheeses or cones ... in warp form — under pressure ... in hanks ... on cheeses or cones ... in warp form Equipment for washing woven and knitted fabrics¹⁾ <i>Machines for washing in rope form</i> — continuous
	1) Under the heading 'equipment for washing' is included the equipment used in the various processes, such as de-sizing, scouring, soaping etc, used at different stages in the dyeing and finishing of textiles. Equipment for washing slivers and tow appears in clause 3.3. Equipment specifically for scouring raw wool is not included in this document; for this equipment refer to the document dealing with spinning.		1) Machines for washing, and milling simultaneously appear in clause 3.5. Machines for washing, shaping, dyeing finishing and drying stockings on formers appear in clause 4.1.2.5.

CLASSIFICATION No.	NOMENCLATURE	CLASSIFICATION No.	NOMENCLATURE
2.3.1.1.1	... with winch (becks for fabrics in rope form)	3.1	Equipment for carbonizing wool
2.3.1.1.2	... with squeezing (for fabrics in rope form)	3.1.1	<i>For loose material</i>
2.3.1.1.3	... in J, Z or other course	3.1.1.1	Becks for acidifying (scourer)
2.3.1.2	— discontinuous	3.1.1.2	Mangling machiness (drying press)
2.3.1.2.1	... with winch (becks for fabrics in rope form)	3.1.1.3	Hydro-extractors (centrifuges)
2.3.1.2.2	... with squeezing (for fabrics in rope form)	3.1.1.4	Drying and carbonizing machines (carbonizer)
2.3.2	<i>Open width washing machines</i>	3.1.1.5	Machines for beating and crushing (beater crusher)
2.3.2.1	— continuous	3.1.1.6	Machines for neutralizing and rinsing (neutralizer)
2.3.2.2	— discontinuous	3.1.2	<i>For fabrics</i>
2.3.2.2.1	... with winch (becks for fabrics in open width)	3.1.2.1	Becks for acidifying
2.3.2.2.2	... with squeezing (for fabrics in open width)	3.1.2.1.1	— in rope form (acidifier for fabrics in rope form)
2.3.2.2.3	... in a spiral course (vertical or horizontal star)	3.1.2.1.2	— in open width (acidifier for fabrics in open width)
2.3.2.2.4	... on perforated rotating roller	3.1.2.2	Mangles (mangle)
2.3.2.2.5	... Jiggers	3.1.2.3	Machines for suction extraction (suction extractor)
2.3.3	<i>Cylinder washing machines</i>	3.1.2.4	Machines for drying and carbonizing
2.3.4	<i>Paddle washing machines</i>	3.1.2.4.1	— in hot air (carbonizing oven)
2.3.5	<i>Apparatus with circulation of the liquor</i>	3.1.2.4.2	— with drying drum
2.3.5.1	— open type	3.1.2.5	Milling machines
2.3.5.2	— under pressure	3.1.2.6	Machines for neutralizing and rinsing
3	EQUIPMENT FOR SPECIAL PROCESSES FOR WOOL (CARBONIZING, PRE-SETTING, SMOOTHING, CHLORINATION, NON-FELTING PROCESSES) AND FOR HEAT TREATMENT FOR SYNTHETIC TEXTILES (SETTING AND SHAPING)	3.1.2.6.1	— in rope form (neutralizers for fabrics in rope form)
		3.1.2.6.2	— in open width (neutralizers for fabrics in open width)
		3.2	Equipment for pre-setting wool
		3.2.1	<i>Machines for pre-setting¹⁾ (crabbing)</i>
		3.2.2	<i>Equipment for pre-setting²⁾</i>

1) With displacement of the fabric in hot water.

2) With circulation of the water or steam and without back grey.

CLASSIFICATION No.	NOMENCLATURE	CLASSIFICATION No.	NOMENCLATURE
3.2.2.1	— with hot water	3.6.1.1	— by hot air
3.2.2.2	— with steam (blowing)	3.6.1.1.1	... with retention of the width (thermo-setting stenters)
3.3	Equipment for smoothing wool	3.6.1.1.2	... without retention of the width
3.3.1	— with drying on perforated drums	3.6.1.1.2.1	thermo-setting by hot air in a horizontal path
3.3.2	— with drying on heated cylinders	3.6.1.1.2.2	thermo-setting by hot air in a vertical path
3.3.3	— with drying on a platform	3.6.1.1.2.3	thermo-setting by hot air in a zigzag path
3.4	Equipment for chlorination and for non-felting treatment of wool	3.6.1.1.2.4	thermo-setting by hot air with perforated drums
3.4.1	<i>Equipment for chlorination</i>	3.6.1.2	— by superheated steam
3.4.1.1	— in aqueous medium	3.6.1.2.1	... with retention of the width (thermo-setting stenters with injection of steam)
3.4.1.2	— in dry gas (chlorination chambers)	3.6.1.2.2	... without retention of the width
3.4.1.3	— in solvent medium	3.6.1.2.2.1	thermo-setting by superheated steam in a horizontal path
3.4.2	<i>Equipment for processing by electric discharge</i>	3.6.1.2.2.2	thermo-setting by superheated steam in a vertical path
3.4.2.1	Machines for processing in a vacuum	3.6.1.2.2.3	thermo-setting by superheated steam in a zigzag path
3.4.2.2	Machines for processing at atmospheric pressure	3.6.1.2.2.4	thermo-setting by superheated steam with perforated drums
3.5	Equipment for milling wool¹⁾	3.6.2	<i>With setting by radiation (infra red thermo-setting)</i>
3.5.1	<i>Milling machines</i>	3.6.3	<i>With setting by surface contact</i>
3.5.1.1	— with rollers (roller milling machines)	3.6.3.1	— with cylinders (thermo-setting with cylinders)
3.5.1.2	— with hammers (Milling stocks)	3.6.3.2	— with fluid bed (fluid bed thermo-setting)
3.5.1.3	— continuous	3.6.3.3	— with molten metal bath (molten metal thermo-setting)
3.5.2	<i>Machines for milling and scouring²⁾</i>	3.6.4	<i>With shaping with water (hot thermo-setting)</i>
3.6	Equipment for heat treatment for synthetic textiles³⁾		
3.6.1	<i>With setting by convection</i>		
	1) Milling in a solvent medium may be effected with the aid of drycleaning equipment.		
	2) These machines are generally used for a light milling.		
	3) For equipment for setting fibres refer to the document dealing with spinning equipment.		

CLASSIFICATION No.	NOMENCLATURE	CLASSIFICATION No.	NOMENCLATURE
3.6.4.1	— without pressure (hot water post-shaping)	4.1.2.5.1	... by immersion
3.6.4.2	— under pressure (pre-shaping autoclave)	4.1.2.5.2	... by spraying
3.6.5	<i>With shaping with saturated steam under pressure</i>	4.2	Dyeing machines
4	DYEING EQUIPMENT	4.2.1	<i>For slivers and tow</i>
4.1	Dyeing apparatus	4.2.1.1	— by impregnation and mangle expression (dyeing padding mangles for sliver and tow)
4.1.1	<i>Apparatus for dyeing in open vessel</i>	4.2.1.2	— by spraying
4.1.1.1	— for loose material	4.2.2	<i>For yarns</i>
4.1.1.2	— for slivers and tow	4.2.2.1	— in hanks
4.1.1.3	— for yarns	4.2.2.1.1	... with hank holders
4.1.1.3.1	... in hanks	4.2.2.1.1.1	... by partial immersion
4.1.1.3.2	... on cheeses cones beams or cakes	4.2.2.1.1.2	... by total immersion
4.1.1.3.3	... in warp form	4.2.2.1.2	... with rotating holders
4.1.1.4	— for woven and knitted fabrics in open width	4.2.2.1.2.1	... without circulation of the liquor
4.1.2	<i>Pressure dyeing apparatus in autoclaves</i>	4.2.2.1.2.2	... with circulation of the liquor
4.1.2.1	— for loose material	4.2.3	<i>For woven and knitted fabrics</i>
4.1.2.2	— for slivers and tow	4.2.3.1	— discontinuous
4.1.2.3	— for yarns	4.2.3.1.1	... by winch (winch becks)
4.1.2.3.1	... in hanks	4.2.3.1.1.1	circular
4.1.2.3.2	... on cheeses, cones, beams, or cakes	4.2.3.1.1.1.1	... without excess pressure
4.1.2.3.3	... in warp form	4.2.3.1.1.1.2	... with excess pressure
4.1.2.4	— for woven and knitted fabrics in open width	4.2.3.1.1.2	elliptical
4.1.2.5	for knitted goods and stockings on formers ¹⁾	4.2.3.1.1.2.1	... without excess pressure
		4.2.3.1.1.2.2	... with excess pressure
		4.2.3.1.2	... with perforated rotating drums
		4.2.3.1.3	... with paddles
		4.2.3.1.3.1	... without pressure
		4.2.3.1.3.2	... with pressure
		4.2.3.1.4	... with star wheels (star wheel becks)
			... vertical
			... horizontal
			Jigger
		4.2.3.1.4.1	
		4.2.3.1.4.2	
		4.2.3.1.5	

1) Certain types of this apparatus serve to effect several operations successively such as washing, shaping, dyeing, rinsing, finishing, drying.

CLASSIFICATION No.	NOMENCLATURE	CLASSIFICATION No.	NOMENCLATURE
4.2.3.1.5.1 4.2.3.1.5.1.1 4.2.3.1.5.1.2 4.2.3.1.5.2 4.2.3.1.6 4.2.3.2 4.2.3.2.1 4.2.3.2.2 4.2.3.2.3 4.2.3.2.4	... without excess pressure without hood with hood ... with excess pressure ... with jets — continuous ... by impregnation and mangling (dyeing padding mangle) ... by spraying with molten metal bath ... in organic solvent medium	5.3.1.2.1.1 5.3.1.2.1.2 5.3.1.2.2 5.3.2 5.3.2.1 5.3.2.2 5.3.2.3 5.3.3 5.3.4	... with a fixed position screen ... with movable screen ... for printing with a rotating screen (rotary screen printing) <i>Roller printing</i> — by relief engraving — by intaglio engraving — by roller coloured en masse <i>Equipment for spray printing</i> <i>Printing equipment by transfer from an intermediary support (thermo-printing)</i>
5	PRINTING EQUIPMENT¹⁾	5.4	Ancillary equipment
5.1	Printing equipment for slivers or cake (Vigoureux machines)	5.4.1 5.4.1.1 5.4.1.1.1 5.4.1.1.1.1 5.4.1.1.1.2 5.4.1.1.1.3	<i>Printing dryers</i> — for printed fabrics ... in hot air ... in a horizontal course ... in a spiral course .. by a drying carriage for table printing
5.2	Printing equipment for yarns	5.4.1.1.2 5.4.1.1.3	... by radiation (infra-red drying carriages for table printing) .. by contact (print drying cylinders)
5.2.1 5.2.2 5.2.2.1 5.2.2.2 5.2.3	<i>Machines for printing hanks</i> <i>Machines for printing cheeses</i> — with circulation and covers — with hollow needles <i>Machines for printing warps</i>	5.4.1.2 5.4.1.2.1 5.4.1.2.2 5.4.2 5.4.3 5.4.4	— for back greys in hot air by contact <i>Machines for engraving the printing rollers</i> <i>Cookers for thickeners</i> <i>Machines for straining the colour pastes</i>
5.3	Printing equipment for woven and knitted fabrics²⁾	6	EQUIPMENT FOR COLOUR FIXATION BY STEAMING AND THERMOSOL TREATMENT
5.3.1 5.3.1.1 5.3.1.2 5.3.1.2.1	<i>Screen printing</i> — manual: printing tables and carriages — automatic ... for printing with a flat screen		
	1) Steaming equipment appears in clause 6.1.2. 2) Equipment for printing selvages appears in clause 10.6.		

CLASSIFICATION No.	NOMENCLATURE	CLASSIFICATION No.	NOMENCLATURE
6.1	Steaming equipment	6.1.2.2	— continuous
6.1.1	<i>For dyeing</i>	6.1.2.2.1	... for long steaming (festoon steamers)
6.1.1.1	— in saturated steam without pressure	6.1.2.2.2	... for rapid steaming
6.1.1.1.1	... discontinuous on rotating rollers ¹⁾ in " steam chests "	6.1.2.2.2.1	... in a zigzag course (Mather and platt system)
6.1.1.1.2	... continuous in a zigzag course ²⁾	6.1.2.2.2.2	... in neutral vapour
6.1.1.2	— under pressure	6.1.2.2.2.3	... in acid vapour
6.1.1.2.1	... discontinuous on rotating rollers in " steam chests "	6.1.2.2.2.4	... in a spiral course (Krostewitz system)
6.1.1.2.2	... continuous in a zigzag course	6.1.2.2.3	... for flash ageing
6.1.1.3	— in superheated steam	6.2	Equipment for heat treatment
6.1.1.3.1	... discontinuous	6.2.1	<i>in hot air</i>
6.1.1.3.2	... continuous	6.2.1.1	— with retention of the width (stenters for heat setting for thermosol and for polymerizing)
6.1.1.3.2.1	with retention of the width (stenters for heat-setting colour fixation and polymerising with injection of steam)		— without tension
6.1.1.3.2.2	without retention of the width	6.2.1.2	... in a horizontal path
6.1.1.3.2.2.1	... in a horizontal course	6.2.1.2.1	... in a vertical path
6.1.1.3.2.2.2	... in a vertical course	6.2.1.2.2	... in a zigzag path
6.1.1.3.2.2.3	... in a zigzag course	6.2.1.2.3	... for polymerizing
6.1.1.3.2.2.4	... with perforated drums	6.2.1.2.3.1	... for heat-setting the pigments
6.1.2	<i>For printing</i>	6.2.1.2.3.2	... for development of the colours by oxidation
6.1.2.1	— discontinuous	6.2.1.2.3.3	... on perforated drums
6.1.2.1.1	... in an autoclave	6.2.1.2.4	<i>by radiation</i>
6.1.2.1.1.1	... with the fabric festooned	6.2.2	<i>by contact</i>
6.1.2.1.1.2	... with the fabric rolled on perforated drums (universal steamers)	6.2.3	— between a single cylinder and an endless belt (reactor)
6.1.2.2.1.3	... with the fabric fixed on a star frame	6.2.3.1	— with multiple drums
		6.2.3.2	— with fluid-bed
		6.2.3.3	<i>by immersion</i>
		6.2.4	— in a molten metal bath (Standfast system)
		6.2.4.1	

1) Part of the installation called in English "Pad roll".

2) Part of the installation called in English "Pad steam".

CLASSIFICATION No.	NOMENCLATURE	CLASSIFICATION No.	NOMENCLATURE
6.2.4.2	— in a bath of paraffin (Williams system)	7.2.1.3.2.4	... in suspended folds (festoon dryers)
7	DRYING EQUIPMENT	7.2.1.3.2.5	with perforated drums
7.1	Equipment for the elimination of water by mechanical means	7.2.2	by radiation (infra-red dryers)
7.1.1	<i>Mangling machines (drying mangles)</i>	7.2.3	by contact
7.1.2	<i>Machines for hydro extraction (centrifugal extraction)</i>	7.2.3.1	— between a single cylinder and an endless belt (felt calenders)
7.1.2.1	Centrifugal machines with fixed basket	7.2.3.2	— with multiple drums (drum dryers)
7.1.2.2	Centrifugal machines with removable basket	7.2.4	by high frequency
7.1.3	<i>Suction extractors (suction extractors in open width)</i>	8	EQUIPMENT FOR WETTING AND DAMPING
7.2	Equipment for the elimination of water by evaporation with heat	8.1	Equipment for wetting with water
7.2.1	<i>in hot air</i>	8.1.1	by spraying with brushes (brush damper with brushes)
7.2.1.1	— for loose material slivers ¹⁾ and tow	8.1.1.1	— on a single face
7.2.1.2	— for yarns	8.1.1.2	— on two faces
7.2.1.2.1	... in hanks	8.1.2	by spraying with jets (mist damper)
7.2.1.2.2	... on cheeses or cones	8.1.2.1	— on a single face
7.2.1.3	— for fabrics	8.1.2.2	— on two faces
7.2.1.3.1	... under tension (drying stenters)	8.2	Equipment for damping with steam (damping with steam)
7.2.1.3.1.1	.. on a flat path (drying stenters)	9	FINISHING EQUIPMENT
7.2.1.3.1.2	.. in tiers (drying stenters in tiers)	9.1	Finishing equipment for application of finishing agents
7.2.1.3.2	... without tension	9.1.1	<i>for woven and knitted fabrics in bulk</i>
7.2.1.3.2.1	... in a horizontal course	9.1.1.1	— in aqueous medium
7.2.1.3.2.2	... in a vertical course	9.1.1.2	— in solvent medium
7.2.1.3.2.3	... by hot flue	9.1.2	<i>for woven and knitted fabrics in open width</i>
		9.1.2.1	— by impregnation and mangling (padding and impregnating machines)
	1) For the drying of slivers, see also clause 3.3.		

CLASSIFICATION No.	NOMENCLATURE	CLASSIFICATION No.	NOMENCLATURE
9.1.2.2	— by spraying	9.3.9	<i>Calenders for tubular knitted fabrics</i>
9.1.2.3	— by spreading with a doctor blade	9.4	Raising equipment
9.1.2.3.1	padding mangles with doctor blades	9.4.1	<i>Raising with vegetable teasels</i>
9.1.2.3.2	coating machines	9.4.1.1	Raising with fixed teasels
9.1.2.4	— by printing with engraved rollers (dots or lines)	9.4.1.2	Raising with revolving teasels
9.1.2.5	— for back filling (back fillers)	9.4.2	<i>Raising with metal teasels</i>
9.1.2.6	— by treatment in solvent medium	9.4.3	<i>Raising with card wire</i>
9.1.2.7	— for polymerization (polymerizing equipment)		
9.2	Softening equipment	9.5	Equipment for shearing and cropping
9.2.1	<i>for yarns (softeners, stretchers and polishers for hanks)</i>	9.5.1	<i>Shearing machines</i>
9.2.2	<i>for woven and knitted fabrics</i>	9.5.1.1	— by continuous action in the length-wise direction
9.2.2.1	— by studded rollers (button breakers)	9.5.1.1.1	on a hollow bed
9.2.2.2	— by scroll rollers (scroll breakers)	9.5.1.1.2	on a pointed bed
		9.5.1.1.3	on cylinders with an engraved cutting pattern (for velours)
9.3	Calendering equipment	9.5.1.2	— by discontinuous action
9.3.1	<i>Conventional calenders</i>		
9.3.2	<i>Special calenders for chasing in several fabric thicknesses</i>	9.6	Equipment for decatizing, stabilizing or modifying the dimensions
9.3.3	<i>Friction calenders</i>	9.6.1	<i>Decatizers</i>
9.3.4	<i>Embossing calenders</i>	9.6.1.1	— potting
9.3.5	<i>Calenders for beating velours (velvets)</i>	9.6.1.2	— crabbing jack
9.3.6	<i>Calenders for simili mercerising (simili mercerising)</i>	9.6.1.3	— decatizing with steam
9.3.7	<i>Moire calenders</i>	9.6.2	<i>Machines for shrinkage by controlled compression</i>
9.3.7.1	— by compression by a fabric roller (mangle)	9.6.2.1	— on a felt 'blanket'
9.3.7.2	— by engraved roller	9.6.2.2	— on a rubber belt
9.3.7.3	— by passage of two layers of fabrics between rollers	9.6.2.3	— between drums
9.3.8	<i>Beetle calenders</i>	9.6.3	<i>Machines for adjusting the width</i>
		9.6.3.1	Stenters for straightening
		9.6.3.2	Device for straightening the yarn
		9.6.4	<i>Machines for relaxing knitted fabrics</i>
		9.6.5	<i>Machines for the forming of knitted fabrics</i>

CLASSIFICATION No.	NOMENCLATURE	CLASSIFICATION No.	NOMENCLATURE
9.7	Equipment for sundry effects	10.6	Equipment for printing selvages
9.7.1	<i>Presses</i>	10.7	Equipment for marking
9.7.1.1	— presses with wrappers (covers)	10.8	Equipment for packing
9.7.1.2	— cloth finishing presses	11	ADDITIONAL EQUIPMENT
9.7.1.3	— flat presses	11.1	Presses for loose material
9.7.1.3.1	... for intermittent treatment	11.2	Machines for winding woven or knitted fabric onto perforated beams for dyeing
9.7.1.3.2	... for continuous treatment	11.3	Machines for gumming selvages
9.7.2	<i>Brushing machines</i>	11.4	Machines for cutting selvages
9.7.3	<i>Pleating machines (pleaters)</i>	11.5	Machines for slitting
9.7.4	<i>Flocking machines</i>	11.6	Machines for slitting open tubular knitted fabrics
9.7.5	<i>Friezing machines</i>	11.6.1	— without gumming of the selvages
9.7.6	<i>Machines for sueding (energy-sueding machines)</i>	11.6.2	— with gumming of the selvages
9.7.7	<i>Machines for waxing (waxing machines)</i>	11.7	Machines for turning knitted fabrics inside out
9.7.8	<i>Shearing machines for velours (velvets)</i>	11.8	Machines for opening fabrics from rope form (scutchers)
9.7.9	<i>Machines for smoothing velours</i>		
10	MACHINES FOR MEASURING, INSPECTING, MARKING AND PACKING		
10.1	Machines for inspection (inspection machines)		
10.2	Machines for measuring		
10.3	Machines for rolling (batches)		
10.4	Machines for plaiting (plaiters)		
10.5	Machines for folding (folding machines)		

INDIAN STANDARDS

ON

DYEING AND FINISHING MACHINERY

IS :

- 4893-1968 Perforated stainless steel cones for wet processing
- 7668-1975 Definition of side (left or right) of dyeing and finishing machines
- 7951-1976 Beams for dyeing fibres, yarns and fabrics
- 7952-1976 Nominal widths of textile finishing machines for treatment of textile fabrics in open width
- 8014-1983 Classification and nomenclature of dyeing and finishing machinery (*first revision*)
- 8304-1977 Wooden winding rollers for textile finishing machines
- 8333-1977 Perforated cylindrical tubes for cheese dyeing
- 9102 (Parts I and II)-1979 Rubber blankets for shrinking range
- 9765-1981 Terminology of stenters